



## Industry News

■ **Verso sells four Jay hydro generators for \$62 million** (Jan 7<sup>th</sup>)  
Verso Corp. announced it sold subsidiary, Verso Androscoggin Power LLC, near its Androscoggin mill in Jay, to New Jersey energy investor, Eagle Creek Renewable Energy LLC, for \$62 million in cash as part of the troubled papermaker's plan to restructure and improve cash flow.  
— *Bangor Daily News*

■ **Biomass plants in West Enfield, Jonesboro to close** (Jan 7<sup>th</sup>)  
Morristown, New Jersey-based Covanta Holding Corp. is closing two of their Maine biomass energy plants in West Enfield and Jonesboro in March because of low energy prices. Energy prices are estimated to be 30 percent below normal for this time of year.  
— *Bangor Daily News*

■ **Madison Paper production cutback could last months** (Jan 26<sup>th</sup>)  
Due to declining demand, the mill, which produces supercalendered magazine paper, has cut back on production two days a week and will result in less pay for workers. The change is expected to be temporary and last between three and six months.  
— *www.centralmaine.com*

## Industry Overview

### Forestland Operations

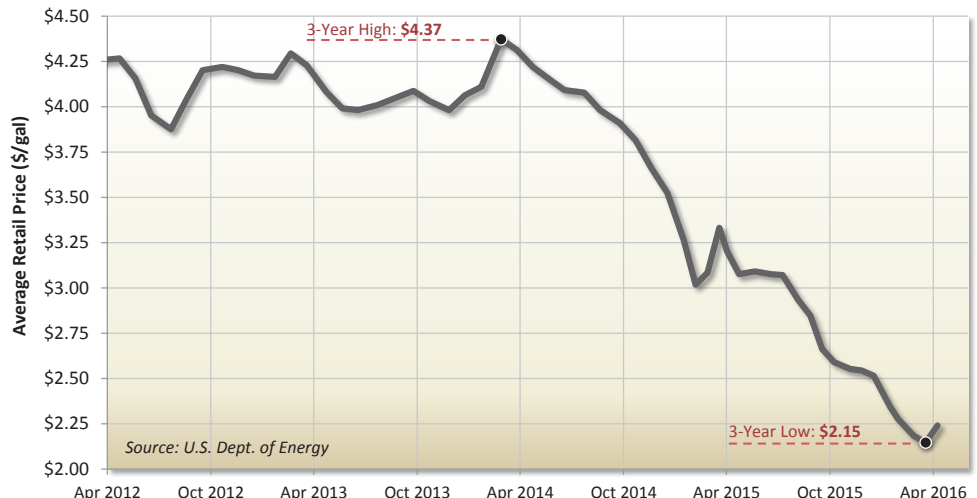
This winter was, in many ways, schizophrenic for forestry operations in the Northeast. We started off in December with good, solid cold weather, which left everyone optimistic that our most important season would come together without a hitch. Frozen ground is vital to being able to access wetter soils that are inaccessible during every other season. This year, within 2 - 3 weeks of the onset of cold weather, after getting into the wetter soil areas, it got warm again and we found ourselves wondering if we should even be there.

As things stayed warm, our operations moved to higher and drier ground during mid February – something usually reserved for late March. To put it into perspective, one forester located in central Maine told me that this March felt like a typical May. The bottom line is that in most regions of the northeast, we never had the snow or frost in the ground to support sustained winter operations.

Consequently, this was a discouraging season for logging contractors. The mild winter translated into a short season, and many loggers who put investment in roadwork and snow plowing had limited opportunity to return that investment through harvesting. We had several days this winter where P&C's own logging division couldn't operate at all. The lack of work has resulted in more and longer seasonal layoffs than usual.

Timber markets didn't help matters much. Our full commentary is below, but in general our regional markets have been tighter than ever in recent memory. This is particularly troublesome for smaller players in the market, like independent loggers, who don't have significant scale.

**NUMBER 2 DIESEL FUEL PRICES - NEW ENGLAND**  
3 YEAR HISTORICAL MONTHLY AVERAGES



With the lack of work this winter, and with markets the way they are, we are concerned that some loggers may choose to exit the business, with the combination of poor weather and stressed markets being the proverbial straw on the camels back.

Although the low price of diesel fuel has remained favorable to loggers for some time now, it has rebounded slightly in the last few weeks. Nobody appears to be predicting a major upswing, and we are still well below the thresholds which would trigger a fuel bonus.

## Forest Product Markets

Markets throughout the northeast have proved challenging through the winter season. Particularly on the low-grade material such as pulpwood, markets filled up early and stayed full. Normally at this time of year, mills are eager to discuss pricing and volume for the coming quarter so that everyone can begin the planning process. This year, however, mills have been holding back the reins, with the long shadow of their wood piles looming over them.

## Pulpwood Products

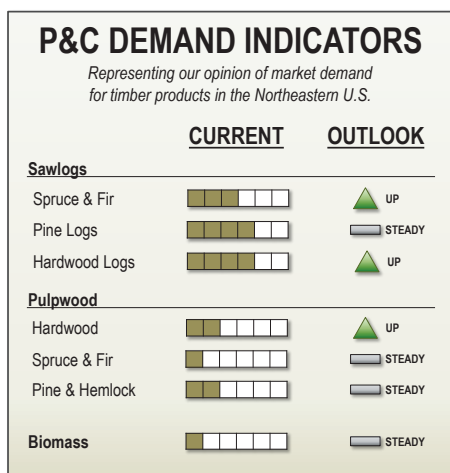
Despite the recent closures of pulp mills in Maine along the Penobscot river, regional consumption of pulpwood remains robust – likely near peak levels. While there are fewer mills to consume the pulpwood, the ones that are running have seen an influx of deliveries, investments in efficiency, and increased production.

Normally the poor winter weather would have constrained mills' ability to get their pulpwood. However, with no exception, regional pulpwood inventories are full across the board, in spite of the weather – yet another indication of how tremendously oversupplied our workforce is.

The same amount of wood is being cut, but there are fewer places it can be delivered. This winter the mills pulled out all the stops to attempt to manage their incoming wood deliveries – reducing prices, putting landowners on quota, playing with the delivery hours – but nothing seemed to stem the tide.

Part of the problem is the loss of regional softwood pulp mills. Coming into the quarter, mixed softwood pulpwood had only one home: Madison Paper. Coming out of the quarter, that mill has now announced its closure. There are other partial consumers of softwood pulpwood, and we still sell some to other mills, but they use it as a filler instead of a primary product in the pulping process. In the early 1900's people came to Maine to build pulp mills because of the vast resource of softwood staples – spruce, pine, and fir. At one time, Great Northern Paper was one of the largest pulp mills in the world. The closure of Madison feels like an end that era in Maine where softwood was king.

Hardwood pulpwood consumption in the region remains robust, and inventories are blossomed for spring. With the tightening of markets for softwood pulp, loggers have moved out of those stands, and instead have focused on producing hardwood pulpwood. We expect most pulpwood markets to limit their wood buying efforts until about late May, drawing down their inventories until after mud season. As a result, harvesting and deliveries during this period will be light.



- Verso Paper, owner of Jay mill, expects quick resolution to bankruptcy filing** (Jan 26<sup>th</sup>)  
Verso Paper Corp. filed for bankruptcy reorganization Tuesday, seeking protection from creditors for business that has been clobbered by market shifts and changing consumer habits. Verso said the filing is intended to allow it to restructure its debt, and that the bankruptcy would "have virtually no impact on the day-to-day operations of the company."  
— [www.centralmaine.com](http://www.centralmaine.com)

- Lincoln mill equipment to be auctioned** (Jan 27<sup>th</sup>)  
A Connecticut-based auctioneer is advertising the sale of equipment, at the shuttered Lincoln Paper & Tissue mill in April, apparently ending attempts to relaunch the facility as a papermaking site. Inspection and sale dates will be April 11-14 for more than 50 large pieces of equipment.  
— *Bangor Daily News*

- Family woodland owners satisfied with timber harvesting on their land** (Feb 5<sup>th</sup>)  
A survey drawn from a random sample of family woodland owners who own less than 1,000 acre ownerships statewide, found that nearly 90 percent of Maine's family woodland owners are happy with the results of recent timber harvesting on their land. The survey was conducted in supports of Maine's Healthy Forests Program.  
— *Maine Forest Service*

Pulp mills are also adjusting how they buy the material. Traditionally, pulp mills have had to reach out over great distances to source their wood. In order to keep longer-distance wood competitively priced, they have set up buying zones – the further the zone from the mill, the higher the price to offset transportation costs. We expect mills to begin adjusting their zones, and in some cases, avoid buying in outlying zones altogether. We've seen some of this already – if mills can get their wood locally, there is no need to buy expensive wood if they can help it.



## In Focus: Lynx on Your Landscape



Photo: Lonnie Jandreau, Prentiss & Carlisle forester

**The Canada Lynx** (*Lynx canadensis*) is a fairly large wild cat found in the northern boreal forests of North America, mainly Alaska and Canada. Lynx are known to exist in only five of the lower 48 states: Washington, Minnesota, Montana, Colorado (re-introduced), and Maine. They are suspected of existing in New Hampshire and Vermont as well. Canada Lynx are federally protected and are listed as a Threatened Species, and are listed in Maine as a Species of Special Concern.

The main diet of Lynx is the Snowshoe Hare, although they will eat other species such as red squirrels, ruffed grouse, mice and other small rodents. Lynx populations generally follow the naturally fluctuating populations of Snowshoe Hare, which thrive in regenerating spruce and fir thickets. The large clear cuts done during the budworm salvage operations in the late 1970's and early 1980's created ideal habitat for Snowshoe Hare due to the fact that these clear cuts grew back to spruce and fir. This increased the food supply of the Canada Lynx, and allowed the population of Lynx to

grow. It is felt by many wildlife experts that the reduction of clear cuts in Maine brought on by regulation will result in a reduction of Hare habitat and, subsequently, the Lynx population.

Despite Lynx being federally-listed as threatened, it is not uncommon to see Lynx or evidence of Lynx in the woods in Maine, especially during the winter. Over the past few years, most of the Prentiss & Carlisle foresters in Maine have seen these cats during the course of their workday at least once, with several foresters seeing them on a regular basis. These cats are not shy and often times will almost "pose" for a photo opportunity. The best chance to see a Lynx in Maine is in the winter, in the northern part of the state, near forest stands that have had a history of harvests.

There is no doubt we are in a transition period for low-grade markets in the Northeast. Everyone in the industry knows that keeping a long term focus will be of continued importance. We believe we will see things work toward equilibrium over time. In fact, timing has really never been better for manufacturing investments in the forest products markets – the fiber resource, labor, and infrastructure are all well established. New investments aren't going to look like what we have seen in the past, but we firmly believe they will happen.

Its worth noting that one specific investment in the Woodland Pulp mill has begun to bear fruit. The mill announced about 18 months ago that they would install two tissue machines at their facility. A few weeks ago, the first products from their first tissue machine were shipped. The second machine is expected to start production in a few months. It is encouraging to see new manufacturing capabilities being introduced to the region.

## Sawn Products

### Softwood

During the last quarter, we have seen reasonable demand for spruce & fir hygrade material. Like every other market, these sawmills found themselves receiving plenty of wood, and inventories are full almost everywhere. This is partly because of normal planning – mills want to fill up their decks for mud season – but also partly because they had a hard time holding deliveries back from a very eager logging force.

### ■ **Wood glut blamed for drop in province's forestry royalty revenues** (Feb 5<sup>th</sup>)

New Brunswick is blaming an expected drop in forestry royalty revenues in the coming year on an unforeseen glut of wood on the market, meaning companies will log less in the coming year, which will translate into less revenue for the government. Sawmill yards are full of cut boards they can't sell, and logs they don't want to cut, until there's some movement.

— CBC News / New Brunswick

### ■ **Is lignin the crude oil of the future? Maybe so, thanks to the sun and photocatalysts** (Feb 5<sup>th</sup>)

The industrial transformation of lignin into valuable chemical intermediates is advancing through the development of two new photocatalysts and ultraviolet light. Lignin is an oily, almost black sludge, which is present primarily in wood, where it is responsible for wood's consistency and hardness.

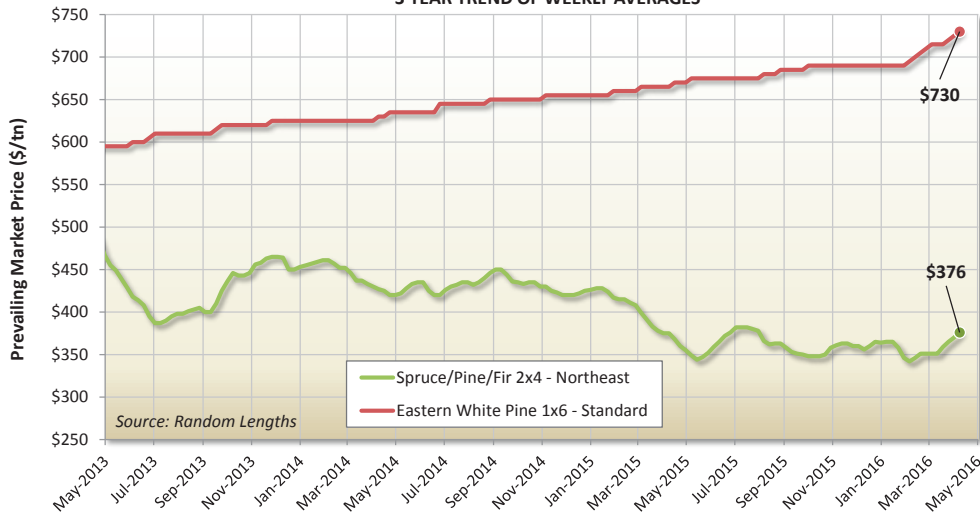
— phys.org

Thankfully, we've also seen generally rising prices on finished lumber. Indexes from *Random Lengths*, which tracks the price of lumber, have been steadily up over the quarter. No sharp upward swing, but consistent strengthening. This is good news for mills, but also good news for landowners selling to those mills.



## PRICE TRENDS IN SOFTWOOD LUMBER

3 YEAR TREND OF WEEKLY AVERAGES



Of course, lumber isn't the only thing sawmills are selling. Softwood lumber manufacturers have several manufacturing byproduct, each of which are also contributors to their profitability. One major byproduct is chips, which are sold as fiber for pulp mills. Larger sawmills can produce 10 - 12 truckloads of chips per day, and normally that provides a nice source of income for these mills. Recently, however, lack of demand for softwood pulpwood has resulted in sawmills being unable to sell all their chips at the rate they are being produced. You can imagine what happens after a few weeks of chip inventory piling up. At least one regional sawmill was forced to stop producing lumber because they ran out of physical storage space for their chips.

Demand for white pine logs has been steady throughout the winter. Pine sawmills are working through some fairly sizable inventories, much like their spruce-fir sawmill cousins, however production has been strong and lumber prices improving. Pine mills also suffer with the same residual problem that the spruce & fir mills do; markets for the byproducts can be slightly different but the issue of residual storage remains.

### Hardwood

Demand for hardwood logs, which was already fairly strong coming into the winter, strengthened through the first quarter. For the most part, these mills had no problem getting the logs they needed, helped by the fact that loggers were in hardwood stands during most of winter because of the condition of the pulp markets. Some Canadian mills appear to have lower-than-usual inventory for this time of year, but most U.S. hardwood mills are very comfortable with what they have. With hardwood logs, inventory management this time of year is important for more reasons than just cash flow -- although they want enough inventory to run through spring, they do not want so much that there is a lot of inventory sitting when it warms up. Warm, humid weather breeds stain, which can reduce the value of their product substantially.

Hardwood lumber pricing has been steady and even rising for some products. Hard maple, the hardwood staple of the northeast, saw prices increase over the quarter, as did ash prices. Birch prices seem to have remained flat. We expect most of these pricing trends to continue through summer. Because of the species varieties that can be sawn at hardwood mills, hardwood lumber

### ■ Wood Pulp & Paper Prices Continue to Rise (Feb 5<sup>th</sup>)

In 2015, global wood pulp prices climbed past the previous peak from 2011, which was the highest price point in more than 30 years. The price is forecast to rise even further at an annualized rate of 5.1% in the three years to 2019. This will also be reflected in the domestic price of paper, which is projected to grow at an annualized rate of 3.2% in the next three years.

— IBISWorld

### ■ Madison Paper production schedule could change weekly, president says (Feb 9<sup>th</sup>)

In January the mill began a two-day-per-week curtailment that was expected to last three to six months. Since the end of January, the mill has continued to operate on a Tuesday-through-Saturday schedule, and while production at the mill is down, the situation is changing on a weekly basis and layoffs have been avoided.

— pressherald.com

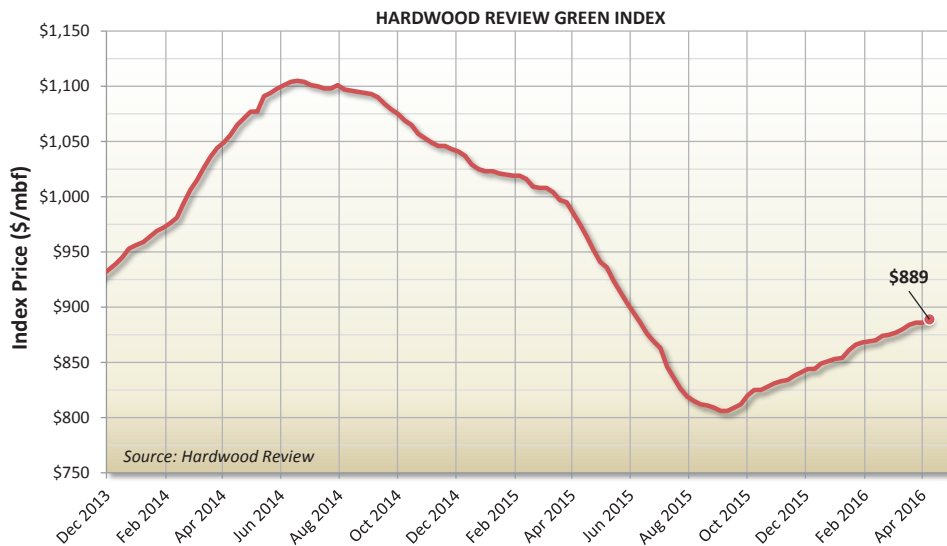
### ■ Park director responds for Obama on North Woods monument effort (Feb 11<sup>th</sup>)

A National Park Service Director responded for President Obama to the letter sent by Senators Susan Collins and Angus King and U.S. Rep. Bruce Poliquin about their serious reservations about a proposal to create a monument in the Katahdin region. Collins, King and Poliquin expressed dissatisfaction with the letter for its failure to address nine conditions they laid out in the letter they sent to the President in November.

— Bangor Daily News



## RECENT PRICES IN HARDWOOD LUMBER



producers can adapt to these product price changes in ways that spruce & fir dimensional sawmills cannot. They can adjust their production schedules to accommodate species and products that are most profitable at the time, whereas spruce & fir lumber producers are manufacturing a single-product commodity and are much more exposed to commodity price swings.

## Biomass

The market for biomass remains challenging in an environment where traditional fuels such as oil and natural gas are low priced and abundant. This quarter, two biomass-to-electricity plants announced shutdowns, blamed largely on the price of other fuel sources, and the resulting low price of electricity generated from those sources. There is also some uncertainty in the industry surrounding whether or not biomass should be considered a “renewable” source. Each state has different tolerances for what is considered renewable and therefore qualifies for various subsidies, and credits.

Given the mild winter and low cost of home heating oil, pellet sales in the northeast were lackluster. Moreover, when a homeowner is faced with the decision to lug around a 40-pound bag of pellets, or to hit a switch on their oil-fired boiler, unless there is a significant cost advantage then they tend to choose the more convenient option. The bottom line is that until oil's high prices return, options for low quality wood as a fuel or energy source will be limited. Seems to be a trade off, and quite honestly, I'm not sure which way I'd rather have it.

Benjamin D. Carlisle  
PRESIDENT

## Wisconsin's Retail Timberland Market

by Sam Radcliffe, Vice President

Wisconsin is a heavily rural state that is a mix of farm and forest land, with the forest concentrated in the central and northern parts of the state (Figure 1). Southwestern Wisconsin does contain considerable woodland mixed with agriculture, but intensive industrial forestry is less prevalent. The eastern and southeastern parts of the state are not only concentrated with agricultural land, they are home to the urban centers that contain the great majority of the state's population. Western Wisconsin is also near the large population of the Minneapolis-St. Paul metropolitan area.



# update

1st Quarter 2016

- **Once again, Canadian lumber's fate hangs in a perverse balance** (Feb 17<sup>th</sup>)  
Just months after a softwood lumber agreement expired between Canada and the U.S., ending nine years of managed trade, the Canadian Prime Minister is initiating the negotiation of a new deal to permanently restrict access to the U.S. market for Canadian exporters of softwood lumber.  
— *The Globe and Mail*

- **Verso receives court ok to continue normal business operations during debt restructuring** (Mar 2<sup>nd</sup>)  
Verso Corp. received final approval from Bankruptcy Court for a variety of first day motions related to its voluntary restructuring under Chapter 11. The approved motions authorize Verso to continue to pay employee salaries, wages and benefits, make qualified retirement plan payments, honor customer programs and pay suppliers in the ordinary course of business for post-petition goods and services.  
— *PaperAge*

- **Madison Paper mill to shut down by May, lay off 214** (Mar 14<sup>th</sup>)  
The company said some employees will stay on past May to maintain buildings and operate a 27-megawatt hydropower generation facility that it plans to sell. Union and state officials have attributed the impending closure to steep foreign competitors, but an energy group representing the mill blamed high natural gas costs, which caused the mill to shut down for periods during the winter.  
— *Bangor Daily News*



Forest ownership in the state is a mix of public (~ 30%) and private (~ 70%) lands, with the private land ownership split about 90%/10% between nonindustrial owners (NIPF's) and large industrial or investor owners. This latter group includes publicly traded real estate investment trusts (REIT's) and timberland investment management organizations (TIMO's). Both of these groups are successors to the pulp and paper companies that divested their large timberland holdings starting in the 1990's.

The timberland market in Wisconsin is monitored by the USDA's National Agricultural Statistics Service (NASS). Each year the agency publishes data on forest and agricultural land sales including number of sales, acres sold, and average prices. The NASS data relate to the "retail" timberland market, i.e. sales of smaller tracts (generally 40-640 acres). This is differentiated from the "wholesale" or "investment grade" market in which the participants are professional investors (including TIMO's and REIT's) and the minimum property size is about 5,000 acres. The retail market is dominated by NIPF's as sellers and buyers, although TIMO's and REIT's often sell into the retail market as at least part of their investment strategy.

Eight-year average timberland prices for those counties above the "timber line" are shown in Figure 2 (NASS data for a year are typically released in August of the following year, so at the moment the latest data available are for 2014). By comparison with Figure 1, it can be readily seen that the highest prices are received in areas where there is (a) a significant agricultural mix; (b) proximity to population centers, or; (c) a relatively high concentration of inland lakes. Prices in the true industrial timberland area (called "up north" by Wisconsin natives) and without these attributes are the lowest in the state.

Public forest lands are very significant in the Lake States, where the ratio of public to private forest lands is higher than anywhere in the eastern US. As Figure 3 shows, in Wisconsin the public lands are concentrated "up north" and represent a significant portion of the heavily forested region.

Figure 1. Wisconsin Land Cover  
(SOURCE: Wisconsin State Cartographer's Office)

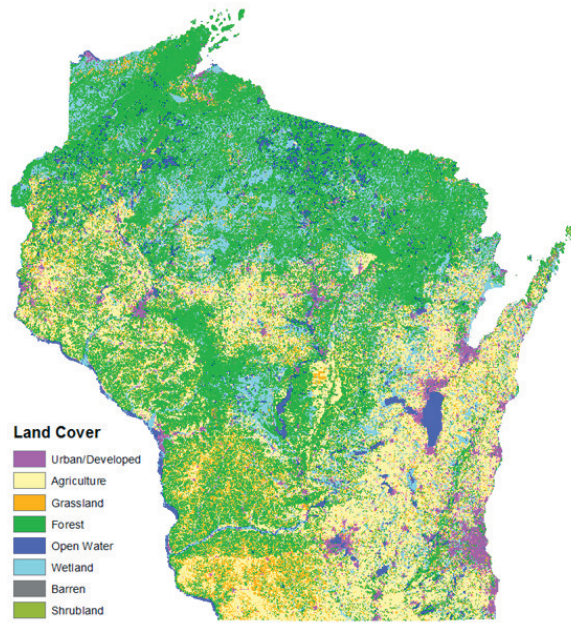


Figure 2. Pattern of Average Forest Land Sale Prices among Wisconsin Counties 2007-14, (\$/acre) (Source: NASS)

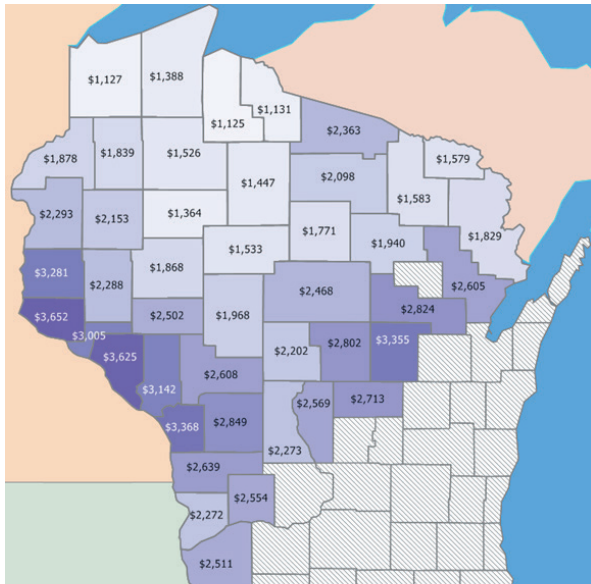
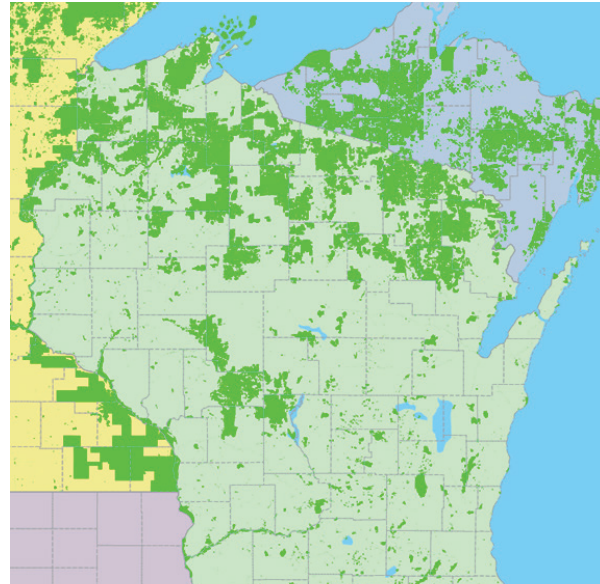


Figure 3. Public Forest Lands in Wisconsin and Nearby Michigan and Minnesota

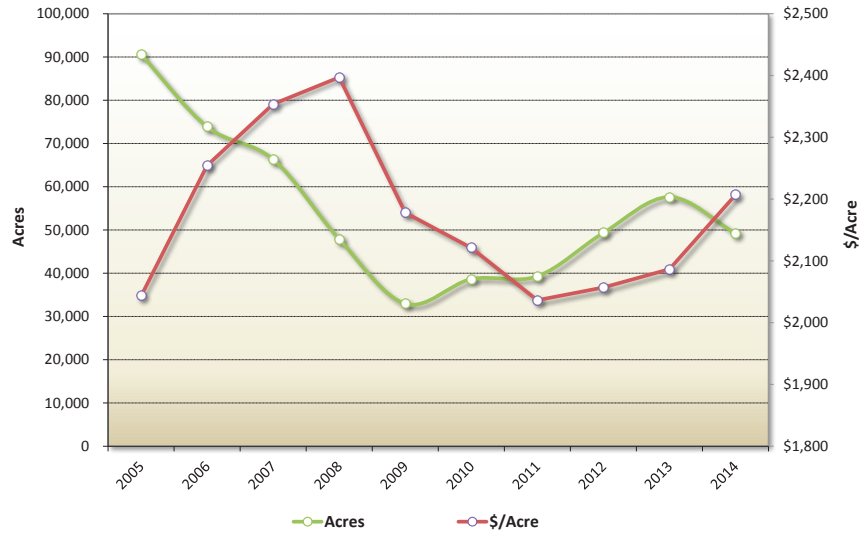


One might make two hypotheses regarding the impact of the high proportion of public land ownership on private timberland markets: (a) the public lands limit the supply of private land and thereby place upward pressure on forest land prices, or; (b) because the public lands provide abundant and inexpensive recreational opportunities, the demand for private land ownership is reduced, thereby placing downward pressure on prices.



On the surface these seem contradictory, but in fact both hypotheses could be true when viewed in a certain context. The hypothesis of upward pressure seems invalidated by the lower prices seen in the public land rich northern region where prices are lower as compared to the southern and western regions. But compared to a state with relatively little public land, for example Maine, the prices in the northern region of Wisconsin are quite high. So perhaps the overall statewide price level is relatively high due to the restricted private supply created by the public lands, while the Wisconsin northern region price level is low compared to the rest of the state because of the abundant recreational opportunities provided by public lands.

Figure 4. 10-Year Trends in Acres Sold and Price per Acre for Forest Land in Northern Wisconsin (Source: NASS)



The NASS data for forest land sales have been collected since 1998, excepting 2002-04. Figure 4 shows the trend in prices and acres sold for the most recent ten years available. During this period, the acreage sold was in a steady decline until 2009; prices were rising sharply prior to the 2008 financial crisis, then fell just as sharply in the following years, bottoming out in 2011. Since 2011 both prices and acres sold have been on an upward trajectory.

If there is any doubt that the general economic conditions drove timberland sales and prices during this period, Figure 5 provides some pretty compelling evidence. When Wisconsin's unemployment rate spiked in 2008, forest land prices swooned. As the unemployment rate gradually declined, prices stabilized then rose.

Figure 5. 10-Year Trends in Wisconsin's Unemployment Rate and Price per Acre for Forest Land in Northern Wisconsin (Sources: NASS, US Bureau of Labor Statistics)

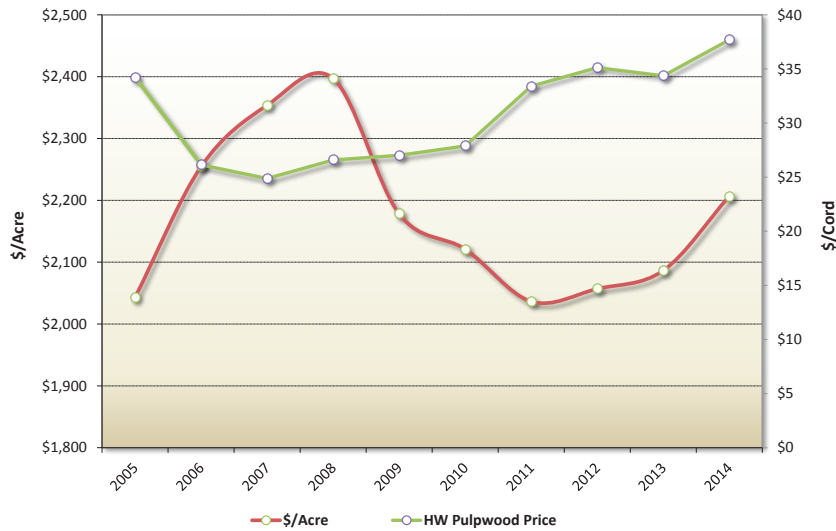


For forest land dedicated to timber production, we would expect a positive relationship between timber prices and land prices. Not surprisingly, there is little correlation in the retail market, where land is put to a variety of uses but is heavily bought for recreational and second home uses. As Figure 6 shows, for much of the 10-year period, there appears to be not only a neutral, but even a negative relationship between land prices and timber prices.

The relationships observed here likely do not hold for prices in the wholesale or investment grade timberland market. However, they do have implications for large scale investors. Due to the lack of correlation between land prices and timber prices, it would seem that a portfolio that is conducive to both timber production and retail land sales has the potential to be less volatile than a timber-only portfolio. Timing of land and timber sales is crucial and the investor needs to be aware of both timber prices and economic variables that impact the general consumer economy. The data also suggest that a portfolio geared toward retail land sales might better be located toward the fringes of the core industrial timberland area, in order to take advantage of higher land prices.

Some of these fringe areas in fact have strong timber attributes, such as proximity to markets and lighter soils that improve operability and seasonality. In this era of compressed discount rates and consequent high timberland prices, there is an obvious need to understand all income opportunities. In Wisconsin the retail forest land market is one of those opportunities that although complex has the potential to boost and diversify a timberland portfolio.

**Figure 6. 10-Year Trends in Hardwood Pulpwood Price per Cord and Price per Acre for Forestland in Northern Wisconsin (Sources: NASS, Timber Mart North)**



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